



## SEQUENCE LISTING

&lt;110&gt; Lomonossoff, George P.

Johnson, John E.

&lt;120&gt; Modified Plant Viruses as Vectors

&lt;130&gt; DOW-04647

&lt;140&gt; 09/580,704

&lt;141&gt; 2000-05-30

&lt;160&gt; 22

&lt;170&gt; PatentIn version 3.1

&lt;210&gt; 1

&lt;211&gt; 120

&lt;212&gt; DNA

&lt;213&gt; Cowpea mosaic virus

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(120)

&lt;223&gt;

&lt;400&gt; 1

gga cct gtt tgt gct gaa gcc tca gat gtg tat agc cca tgt atg ata 48  
Gly Pro Val Cys Ala Glu Ala Ser Asp Val Tyr Ser Pro Cys Met Ile  
1 5 10 15

gct agc act cct cct gct cca ttt tca gac gtt aca gca gta act ttt 96  
Ala Ser Thr Pro Pro Ala Pro Phe Ser Asp Val Thr Ala Val Thr Phe  
20 25 30

gac tta atc aac ggc aaa ata act 120  
Asp Leu Ile Asn Gly Lys Ile Thr  
35 40

&lt;210&gt; 2

&lt;211&gt; 40

&lt;212&gt; PRT

&lt;213&gt; Cowpea mosaic virus

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TECH CENTER 1600/2900

G12

32  
-1-

<400> 2

Gly Pro Val Cys Ala Glu Ala Ser Asp Val Tyr Ser Pro Cys Met Ile  
1 5 10 15

Ala Ser Thr Pro Pro Ala Pro Phe Ser Asp Val Thr Ala Val Thr Phe  
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Asp Leu Ile Asn Gly Lys Ile Thr  
35 40

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<211> 81

<212> DNA

<213> Foot-and-mouth disease virus

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<222> (3)..(80)

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caa gtt ttg gct caa aag gtt gct cgg act ctt c 81  
Gln Val Leu Ala Gln Lys Val Ala Arg Thr Leu  
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<211> 26

<212> PRT

<213> Foot-and-mouth disease virus

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Val Leu Ala Gln Lys Val Ala Arg Thr Leu  
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 1 5 10 15  
 gct agc act tat agt aga aat gct gtt cct aat ttg aga gga gat ctt 96  
 Ala Ser Thr Tyr Ser Arg Asn Ala Val Pro Asn Leu Arg Gly Asp Leu  
 20 25 30  
 caa gtt ttg gct caa aag gtt gct cgg act ctt cct agc act cct cct 144  
 Gln Val Leu Ala Gln Lys Val Ala Arg Thr Leu Pro Ser Thr Pro Pro  
 35 40 45  
 gct cca ttt tca 156  
 Ala Pro Phe Ser  
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A12

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 1 5 10 15  
 Ala Ser Thr Tyr Ser Arg Asn Ala Val Pro Asn Leu Arg Gly Asp Leu  
 20 25 30  
 Gln Val Leu Ala Gln Lys Val Ala Arg Thr Leu Pro Ser Thr Pro Pro  
 35 40 45  
 Ala Pro Phe Ser  
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 <212> DNA  
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 cca tgt atg ata gct agc act cct cct gct cca ttt tca gac gtt aca 48  
 Pro Cys Met Ile Ala Ser Thr Pro Pro Ala Pro Phe Ser Asp Val Thr  
 1 5 10 15  
 gca gta act ttt gac tta atc 69  
 Ala Val Thr Phe Asp Leu Ile  
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 <211> 23  
 <212> PRT  
 <213> Cowpea mosaic virus  
 <400> 8  
 Pro Cys Met Ile Ala Ser Thr Pro Pro Ala Pro Phe Ser Asp Val Thr  
 1 5 10 15  
 Ala Val Thr Phe Asp Leu Ile  
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 <211> 69  
 <212> DNA  
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 <222> (1) .. (69)  
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cca tgt atg ata gct agc act cct cct gct cca ttt tca gac gtc aca 48  
Pro Cys Met Ile Ala Ser Thr Pro Pro Ala Pro Phe Ser Asp Val Thr  
1 5 10 15

gca gta act ttt gac tta atc 69  
Ala Val Thr Phe Asp Leu Ile  
20

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<211> 23

<212> PRT

<213> Cowpea mosaic virus

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Pro Cys Met Ile Ala Ser Thr Pro Pro Ala Pro Phe Ser Asp Val Thr  
1 5 10 15

Ala Val Thr Phe Asp Leu Ile  
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<211> 67

<212> DNA

<213> Human immunodeficiency virus

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<221> CDS

<222> (3) .. (65)

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1 5 10 15

gat cgt gat cgt tcg gac gt 67  
Asp Arg Asp Arg Ser Asp  
20

26

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<211> 21

<212> PRT

<213> Human immunodeficiency virus

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1 5 10 15

Arg Asp Arg Ser Asp  
20

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<212> DNA

<213> Human immunodeficiency virus

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<221> CDS

<222> (1)..(141)

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gga cct gtt tgt gct gaa gcc tca gat gtg tat agc cca tgt atg ata 48  
Gly Pro Val Cys Ala Glu Ala Ser Asp Val Tyr Ser Pro Cys Met Ile  
1 5 10 15

gct agc act gac cgc cct gag ggc atc gag gaa gag ggc ggt gag cgc 96  
Ala Ser Thr Asp Arg Pro Glu Gly Ile Glu Glu Glu Gly Gly Glu Arg  
20 25 30

gat cgt gat cgt tcg gac gtc aca gca gta act ttt gac tta atc 141  
Asp Arg Asp Arg Ser Asp Val Thr Ala Val Thr Phe Asp Leu Ile  
35 40 45

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<211> 47

<212> PRT

<213> Human immunodeficiency virus

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Gly Pro Val Cys Ala Glu Ala Ser Asp Val Tyr Ser Pro Cys Met Ile  
1 5 10 15

Ala Ser Thr Asp Arg Pro Glu Gly Ile Glu Glu Glu Gly Gly Glu Arg  
20 25 30

Asp Arg Asp Arg Ser Asp Val Thr Ala Val Thr Phe Asp Leu Ile  
35 40 45

<210> 15

<211> 52

<212> DNA

<213> Human rhinovirus

<220>

<221> CDS

<222> (3)..(50)

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ct agc act cct gct act gga atc gat aat cat aga gaa gct aaa ttg  
Ser Thr Pro Ala Thr Gly Ile Asp Asn His Arg Glu Ala Lys Leu  
1 5 10 15

47

gac gt  
Asp

52

<210> 16

<211> 16

<212> PRT

<213> Human rhinovirus

<400> 16

Ser Thr Pro Ala Thr Gly Ile Asp Asn His Arg Glu Ala Lys Leu Asp  
1 5 10 15

<210> 17

<211> 126

<212> DNA

<213> Human rhinovirus

25  
-X-

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<221> CDS

<222> (1) .. (126)

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<400> 17

gga cct gtt tgt gct gaa gcc tca gat gtg tat agc cca tgt atg ata 48  
Gly Pro Val Cys Ala Glu Ala Ser Asp Val Tyr Ser Pro Cys Met Ile  
1 5 10 15

gct agc act cct gct act gga atc gat aat cat aga gaa gct aaa ttg 96  
Ala Ser Thr Pro Ala Thr Gly Ile Asp Asn His Arg Glu Ala Lys Leu  
20 25 30

gac gtc aca gca gta act ttt gac tta atc 126  
Asp Val Thr Ala Val Thr Phe Asp Leu Ile  
35 40

<210> 18

<211> 42

<212> PRT

<213> Human rhinovirus

<400> 18

Gly Pro Val Cys Ala Glu Ala Ser Asp Val Tyr Ser Pro Cys Met Ile  
1 5 10 15

Ala Ser Thr Pro Ala Thr Gly Ile Asp Asn His Arg Glu Ala Lys Leu  
20 25 30

Asp Val Thr Ala Val Thr Phe Asp Leu Ile  
35 40

<210> 19

<211> 18

<212> DNA

<213> Escherichia coli

<400> 19

agttactgct gtaacgct 18



<210> 20

<211> 43

<212> DNA

<213> Cowpea mosaic virus

<400> 20

ccctgcagta atacgactca ctatagtatt aaaatcttaa tag

43

<210> 21

<211> 19

<212> DNA

<213> Escherichia coli

<400> 21

ctgctgtgac gtctgaaaa

19

<210> 22

<211> 22

<212> PRT

<213> Cowpea mosaic virus

<400> 22

Val Pro Asn Leu Arg Gly Asp Leu Gln Val Leu Ala Gln Lys Val Ala  
1 5 10 15

Arg Thr Leu Pro Cys Gly  
20

G12  
over